

LISTing Newsletter

Newsletter of the Long Island Sinclair/Timex Users Group
(Incorporating N.Y.T.S.E.)

JUNE/JULY
Summer Program Issue

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TRY THIS



Software



TS2068 & ZX81

Listing Policy

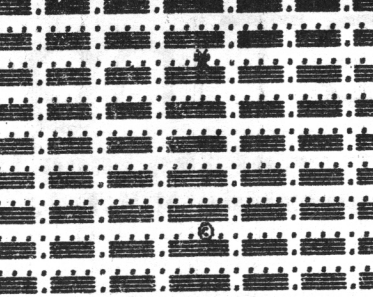
Annual Dues...\$ 16.00

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```

1 GO SUB 410
10 REM *** ZOMBIE ***
20 REM BY KEITH SKAPINSKI
30 REM
40 FOR i=USR "a" TO USR "b"+7
50 READ a: POKE i,a: NEXT i
60 DATA 255,0,255,0,255,0,255,
0,66,36,189,173,255,36,36,102
70 LET h=0
80 LET s=1
90 CLS : PRINT "Difficulty Lev
e l? (1-3) : " "1=Easy 3=Hard"
100 LET q$=INKEY$: IF q$="1" OR
q$="3" THEN GO TO 100
110 LET i=(VAL q$+2)/5: CLS
120 LET x=15: LET y=16: LET a=5
: LET b=16
130 CLS
140 PRINT "AAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAA"
150 FOR i=1 TO 19: PRINT AT i,0
:A.....
: A": NEXT i
160 PRINT "AAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAA"
170 FOR i=2 TO 18 STEP 2: PRINT
AT i,2:"AAA.AAA.AAA.AAA.AAA.AA
A.AAA": NEXT i
180 PRINT AT x,y;"@": PRINT AT
a,b: OVER 1;"B"
190 IF a=x AND b=y THEN GO TO 3
30
200 IF s/372=INT (s/372) THEN B
EEP 1,1: LET s=s+1: GO TO 120
210 LET x1=x: LET y1=y: LET a1=
a: LET b1=b
220 LET x=x+(INKEY$="6" OR IN 3
1=4)-(INKEY$="7" OR IN 31=8)
230 LET y=y+(INKEY$="8" OR IN 3
1=1)-(INKEY$="5" OR IN 31=2)
240 IF CODE SCREEN$ (x,y)=0 THE
N LET x=x1: LET y=y1: BEEP .01,1
0
250 IF SCREEN$ (x,y)="." THEN L
ET s=s+1: BEEP .0001,60
260 IF RND<l THEN LET a=a+(x>a)
-(x<a): IF CODE SCREEN$ (a,b)=0
THEN LET a=a1
270 IF RND<l THEN LET b=b+(y>b)
-(y<b): IF CODE SCREEN$ (a,b)=0
THEN LET b=b1
280 IF s>h THEN LET h=s
290 PRINT AT 21,0: INK 2: INVER
SE 1;" SCORE: ";s;"HI-SCORE: "
h
300 PRINT AT a1,b1: OVER 1;"B"
310 PRINT AT x1,y1;" "
320 GO TO 180
330 PRINT AT 10,10: FLASH 1;" G
AME OVER "
340 BEEP 1,0: BEEP 1,0: BEEP .1
,0: BEEP 1,0: BEEP 1,3: BEEP .5,
2: BEEP 1,0: BEEP .5,-1: BEEP 1,
0
350 DIM a$(704): FOR i=0 TO 7:
BEEP .001,i+40: PRINT AT 0,0: IN
K i: OVER 1;a$: NEXT i
360 CLS
370 PRINT AT 10,1: FLASH 1;" PR
ESS ANY KEY FOR ANOTHER GO "
380 IF INKEY$="" THEN OUT 254,R
ND+255: GO TO 380
390 BORDER 7: GO TO 80
400 STOP
410 CLS : PRINT AT 10,5:"KEMPST
EN COMPATABLE": PAUSE 150
420 RETURN
430 CLEAR : RANDOMIZE USR 100:
OPEN #4,"dd": PRINT #4: SAVE "ZO
MBIE.BA"

```

"ANAGRAM"

This program will make GOOD and BAD Anagrams of words you Input. It will fit in 1K.
Created by: Jody Koenig; Decorah, Iowa.

```

1 REM ANAGRAM
10 INPUT A$
15 DIM D(LEN A$)
17 LET A=1
20 FOR C=1 TO LEN A$
30 LET X=INT (1+LEN A$*RND)
40 FOR B=1 TO LEN A$
50 IF X=D(B) THEN GOTO 30
60 NEXT B
70 PRINT A$(X)
72 LET D(A)=X
75 LET A=A+1
80 NEXT C
85 PRINT
90 GOTO 15

```



"RENUMBERING ROUTINE"

Attach these lines to the end of a basic program. Enter GOTO 9991- in the immediate mode - and the computer will renumber any basic program counting in intervals of 5. If you wish to change the numbering interval, change the value of N and the 5 in line 9995.

Remember to change GOTOs and GOSUBs after the program has been renumbered.

Created by: Steven Kaye; Submitted by and with permission from the ZX USERS Group of New York.

```

9991 LET B=16509
9992 LET N=5
9993 POKE B,INT (N/256)
9994 POKE B+1,N-256*INT (N/256)
9995 LET N=N+5
9996 LET B=B+1
9997 IF 256*PEEK B+PEEK (B+1)=9990 THEN STOP
9998 IF PEEK (B-1)=118 THEN GOTO 9993
9999 GOTO 9996

```

"BINARY CHARACTER PEEKER"

This program will print out the Binary Representation (and equal Decimal number) of Eight Consecutive Addresses, a GOOD use for this is to see how characters are held in the ROM, for example Input Address "8000" to see how the letter "C" is formed (as seen by the Decimal 1's).

Created by: Jody Koenig; Decorah, Iowa.

```

10 PRINT "ENTER STARTING ADDRESS"
15 PRINT
20 INPUT A
40 FOR F=A TO A+7
50 LET B=PEEK F
52 LET D=B
55 LET C=128
60 PRINT F;"=";
70 FOR G=1 TO 8
80 PRINT CHR$( (B>=C)+28 );
90 IF B>=C THEN LET B=B-C
100 LET C=C/2
110 NEXT G
120 PRINT "=";D
130 NEXT F
140 INPUT A$
150 CLS
160 RUN

```

ENTER STARTING ADDRESS

```

8000=00000000=0
8001=00111100=60
8002=01000010=66
8003 01000000=64
8004=01000000=64
8005 01000010=66
8006 00111100=60
8007=00000000=0

```

L.I.S.T.

L.I.S.T.

L.I.S.T.

"64 CHARACTERS" AND A CLEAR SCREEN

Use this program in conjunction with your users manual. This is the way you begin to work with 64 characters on the screen. You need to shuffle everything around inside the computer's RAM memory and that is exactly what this routine does. Follow the prompts in the REM statements and you should not have any troubles.

Created by: Doug Dewey of Triangle Users Group, North Carolina;
Submitted by and with permission from the ZX USERS Group of New York.

1 REM This program allows the user to reallocate various different components of RAM memory and make way for a clear screen in the 64-character mode. See page 254 for the different display file/memory maps and pages 247 and 248 for the codes for variable b.

2 REM Call this routine by PRINT
USR 63000

5 CLEAR 62999

7 PRINT "Please input b": INPUT b

10 LET a=63000

20 READ n: POKE a,n

30 LET a=a+1: GOTO 20

40 DATA 243,62,1,211,244,219,255,2
03,255,211,255,62,b,245,251,205,14
2,14,243,219,255,203,191,211,255,1
75,211,244,241,254,128,3,2,3,50,19
4,92,251,201

"MOSAIC CURTAIN"

Are you tired of BLANK screens at the end of your programs? This little routine at the end of your program will give you a very PLEASANT and ATTRACTIVE SCREEN. (g means a graphic character "8"). From Synapse of Central PA. TS USERS Group; Submitted by and with permission from the ZX USERS Group of New York.

```
10 FOR x=1 TO 704: LET i=RND*5+1: I
NK i: PRINT "g";
20 NEXT X
25 PAUSE 60: CLS: GOTO 10
```

"GRAPH 16K"

Here is a program to draw a bar graph. When it runs, you must enter 20 numbers, greater than 0 but less than 40. My goal in writing the program was to keep it as short as possible, thus it doesn't offer fancy borders, variable range for numbers etc. The program illustrates a plotting technique you can use in other programs.

From: Sinclair/Timex Users Group of Boston, Massachusetts; Submitted by and with permission from the ZX USERS Group of New York.

10 REM *** TS1000 GRAPH PROGRAM

20 LET Y=4

30 DIM A(40)

40 FOR T=1 TO 20

50 INPUT A(T)

60 NEXT T

70 LET T=1

80 FOR Z=1 TO 20

90 FOR R=1 TO A(T)

100 PLOT Y,R

110 NEXT R

120 LET T=T+1

130 LET Y=Y+2

140 NEXT Z

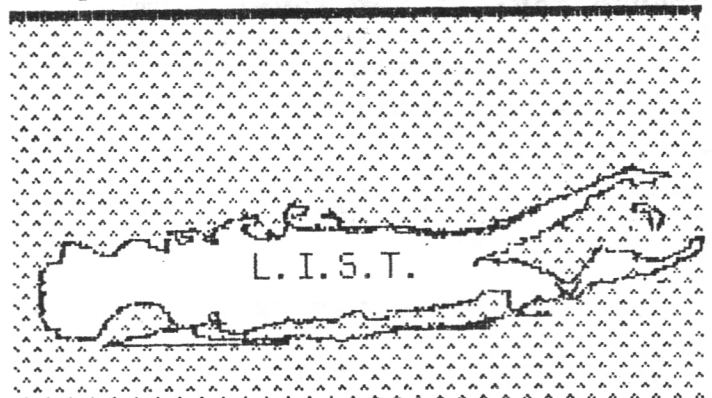
150 PRINT AT 16,0;"10"

160 PRINT AT 11,0;"20"

170 PRINT AT 6,0;"30"

180 PRINT AT 1,0;"40"

Long Island Sinclair Timex Group



"A HEADER PROGRAM FOR" ZX-81&TS-1000

When I got my TS-2068 I thought one of the marvellous things about it was a Header program by which one could get the name of a program displayed on-screen a few seconds after it started loading. If only the ZX-81 had that feature it would be marvellous, I thought. Where have I been all this time? I have only just discovered there is a program to do practically the same thing. It is to be found in Mike Lord's book "Explorers guide to the ZX-81". How I ever spotted it I will never know.

With the thought there must be many in the same position as myself, I would like to present this practical program.

It is a M/C routine that is placed in a REM statement at the beginning of a short Basic program. First create a REM statement of 66 spaces (or more) then enter the lines as shown in Fig. 1. Put your computer in the FAST mode, RUN the program and enter the numbers in Fig. 2 starting with the top row, left to right. When you are done check that the sum of the numbers is 7620. Then delete all lines except the line 1. containing the REM statement.

Enter the lines in Fig. 3. SAVE this program, since this is the program you will use to obtain HEADER information from your other program tapes.

When you RUN this program, it will prompt you to start playing the tape which you wish to identify. At the start of the LOADING of a tape the program name under which it was SAVED will appear on the screen. Any other program appearing on the tape will be similarly identified.

Written by: G.F. Chambers; Canada,
Submitted by: ZX users Group of
New York.

Fig 1)

```
1>REM 123456789012345678901234567
8901234567890123456789012345678901
```

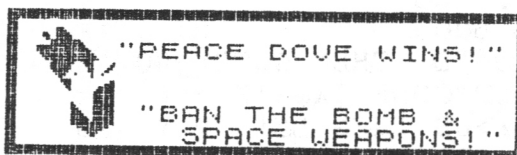
```
23456
10 FOR I=16514 TO 16579
20 INPUT A
30 POKE I,A
40 PRINT "      40 SCROLL      "
50 PRINT I;" ",A
60 NEXT I
70 PRINT "FINISHED"
110 PRINT "PRESS A KEY TO CHECK "
120 IF INKEY$="" THEN GOTO 120
130 LET TOTAL=0
140 FOR I=16514 TO 16579
150 LET X=PEEK I
160 LET TOTAL=TOTAL+X
170 NEXT I
180 PRINT TOTAL
```

Fig 2)

205	35	15	205	136	64
24	251	14	1	6	0
62	127	219	254	31	23
23	56	16	16	245	241
205	138	64	121	215	203
121	40	247	205	43	15
201	213	30	146	6	26
29	219	254	23	203	123
123	56	245	16	245	209
32	4	254	86	48	206
63	203	17	48	201	201

Fig 3)

```
1>REM LN 7?LN -RND/ CLS : "YX" = RE
TURN 3**5(( PRINT LET LN -RND?NOT A
CS ?C RUN LN F?TAN STR$ 25,1 =RETU
RN*ACS ??5 PRINT (PRINT SGN 4. RETU
RN*KEXP ZACS)KTAN TAN
20 PRINT " 20 RAND USR 16514"
30 PRINT AT 20,0;"PRESS A KEY TO RE
AD TAPE"
40 IF INKEY$="" THEN GOTO 40
50 CLS
60 GOTO 20
100 SAVE "HEADER READER"
110 GOTO 30
```



"SECRET WRITING MACHINE"

This program was converted from Microsoft BASIC. It turns your computer into a secret writing machine, using a simple and ancient cryptographic technique known as the Caesar cipher. For example, with a key of 3, the message: THE APPLES ARE RIPE becomes the encoded message: WKH DSSOHV DUH ULSH. Load it in your ZX-81, T/S-1000 and Explore the craft of cryptography! Have Fun.

Created by: G. Stewart; Revised by: E.J. D'Urbano; Submitted by and with permission from the ZX USERS Group of New York.

```

10 LET LB=38
20 LET UB=63
30 PRINT TAB 5;"SECRET WRITING MACHINE"
31 PRINT TAB 5;" "
40 PRINT
100 PRINT "ENTER THE KEY (1-25)";
101 INPUT K
102 PRINT K
103 PRINT
110 IF K<1 OR K>25 THEN GOTO 100
200 PRINT "ENTER E TO ENCODE OR D T
O DECODE ";
201 INPUT C$
202 PRINT C$
203 PRINT
210 IF C$<>"E" AND C$<>"D" THEN GOT
O 200
300 PRINT "ENTER THE MESSAGE:"
301 FAST
302 PRINT
310 INPUT M$
311 PRINT M$
312 PRINT
320 IF M$="" THEN GOTO 300
330 SLOW
400 FOR P=1 TO LEN (M$)
410 LET X$=M$(P TO P+1-1)
420 IF X$>="A" AND X$<="Z" THEN GOT
O 500
430 LET Y$=X$
440 GOTO 600
500 IF C$="D" THEN GOTO 540
510 LET YP=CODE (X$)+K
520 IF YP>UB THEN LET YP=YP-26
530 GOTO 560
540 LET YP=CODE (X$)-K

```

```

550 IF YP<LB THEN LET YP=YP+26
560 LET Y$=CHR$ (YP)
600 PRINT Y$;
700 NEXT P
800 PRINT
801 PRINT
810 PRINT "DONE"
820 STOP

```

"ZX-81 FAST-TYPE"

This short program enables ZX-81 users to clear the screen when full during entry of long programs thus preventing the whole screen from being rewritten each time a new line is entered.

Created by Demetre from U.K.; Submitted by and with permission from the ZX USERS Group of New York.

Enter these lines first:

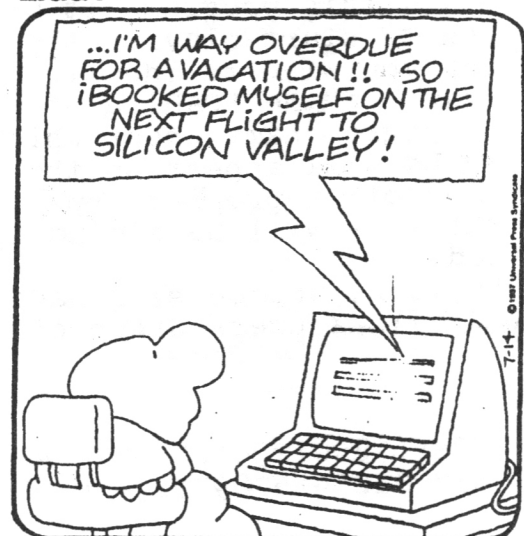
```

2 CLS
3 PRINT "ENTER LAST LINE NO. "
4 INPUT LL
5 POKE 16419,LL-INT (LL/256)*256
6 POKE 16420,INT (LL/256)
7 LIST LL
8 STOP

```

When screen is full during program entry, enter GOTO 2 as a direct command, enter the number of the last line on screen and the screen is cleared leaving the last line.

ZIGGY



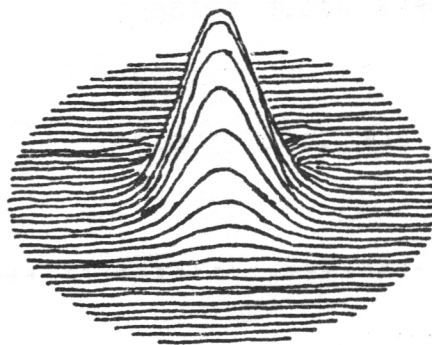
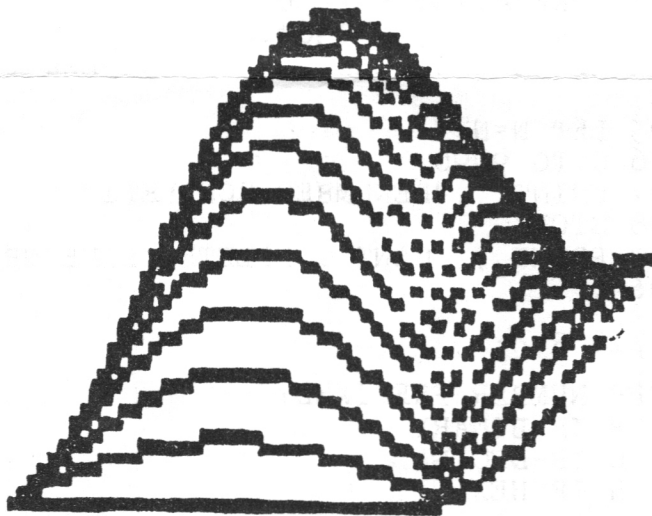
"GRAPH-GRAPH"

Input an equation containing - X or y or both and the computer will print a graph. For ZX/81-TS/1000
Submitted by: ZX Users Group of New York.

```
10 PRINT "INPUT AN EQUATION CONTAIN
ING      X OR Y OR BOTH"
20 DIM W(2,64)
30 INPUT Z$
40 CLS
50 FAST
60 FOR Y=0 TO 21
70 FOR X=0 TO 42
80 LET Z=VAL Z$+Y
90 IF Z<W(2,X+Y+1) OR NOT Y OR X=42
THEN LET W(2,X+Y+1)=Z
100 IF Z>W(1,X+Y+1) OR NOT Y OR X=4
2 THEN LET W(1,X+Y+1)=Z
110 IF W(2,X+Y+1)=Z OR W(1,X+Y+1)=Z
THEN IF Z<44 AND Z>-1 THEN PLOT X+Y
,Z
120 NEXT X
130 NEXT Y
140 SLOW
150 PRINT AT 0,0;Z$
160 GOTO 30
```

Sample Run:

$\text{SIN}(X/13) * \text{SIN}(Y/6.5) * 30$



"PATTERN"

This program will produce different patterns on your Screen. Type it in I think you'll like it.

From ZX USERS of Italy; Submitted by and with permission from the ZX USERS Group of New York.

```
1 REM PATTERN
10 RANDOMIZE
20 FOR F=1 TO 20
30 PRINT "
40 NEXT F
60 LET X=10
70 LET Y=10
80 LET A$=""
100 LET X1=1
110 LET Y1=1
500 PRINT AT Y,X;" ■"
510 LET X1=X1-2*(X=30)+2*(X=1)
520 LET Y1=Y1-2*(Y=20)+2*(Y=1)
600 LET X=X+X1
610 LET Y=Y+Y1
620 PRINT AT Y-Y1,X-X1;A$
630 IF RND<.05 THEN LET A$="" ■"
640 IF RND<.044 THEN LET A$="-" ■"
650 GOTO 500
```

SAMPLE RUN:

LONG ISLAND SINCLAIR TIMEX

USERS GROUP PRESENTS

ZX-81 AND TS1000

TECHNICAL TIDBITS

PART II

"HEX-LOADING PROGRAM"

This is a BIN/DEC/HEX conversion program.

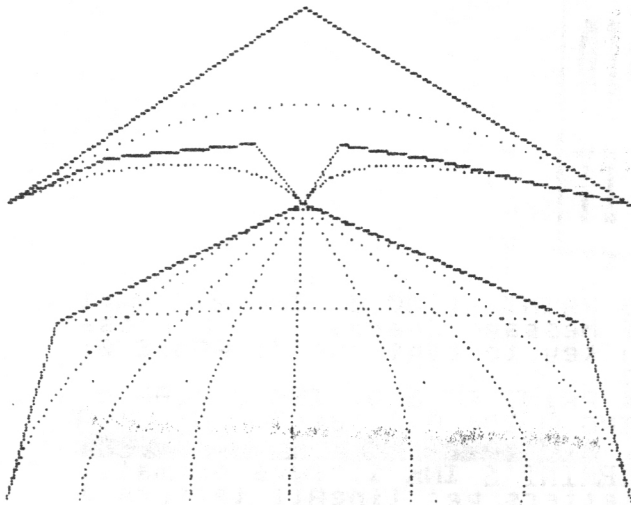
Created by: Paul W. Stuehn; Canton, MI.

```
10 LET X=30000
20 LET A$=""
30 IF A$="" THEN INPUT A$
40 IF A$="S" THEN STOP
50 POKE X,16*CODE A$+CODE A$(2)-476
60 LET X=X+1
70 LET A$=A$(3 TO )
80 GOTO 30
9490 REM *****
9500 REM BIN/DEC/HEX CONV. PRGM.
9510 LET Z=PI-PI
9520 LET U=PI/PI
9530 LET T=U+U
9540 LET F=T+T
9550 LET S=F*F
9560 PRINT AT F,Z;"ENTER NUMBER PRE
FIXED: ";TAB F;"B IF BINARY";TAB F;"
D IF DECIMAL";TAB F;"H IF HEX"
9570 INPUT I$
9580 IF I$="" THEN STOP
9590 LET T$=I$(U)
9600 LET X=(T AND T$="B")+(10 AND T
$="D")+(S AND T$="H")
9610 IF X=Z THEN GOTO 9570
9620 CLS
9630 LET D=Z
9640 FOR A=T TO LEN I$
9650 LET D=D*X+CODE I$(A)-28
9660 NEXT A
9670 PRINT "DEC    HEX    BINARY"
9680 LET E=D
9690 FOR A=U TO F
9700 PRINT AT T,10-A;CHR$(CODE "0"
+E-S*INT (E/S))
```

```
9710 LET E=INT (E/S)
9720 NEXT A
9730 FOR A=U TO S
9740 PRINT AT T,27-A;CHR$(CODE "0"
+D-T*INT (D/T))
9750 LET D=INT (D/T)
9760 NEXT A
9770 GOTO 9560
9780 REM *****
9790 REM **END OF BI/DEC/HEX **
9800 REM *****
9970 STOP
9971 LET A=16509
9972 INPUT S
9973 PRINT S
9974 LET L=256*PEEK A+PEEK (A+1)
9975 IF L=S THEN RETURN
9976 IF L=9970 THEN GOTO 9979
9977 LET A=A+4+PEEK (A+2)+256*PEEK (
A+3)
9978 GOTO 9974
9979 PRINT S;"NOT FOUND"
9980 PRINT "LAST LINE TO BE RENUMBER
ED=";
9981 GOSUB 9971
9982 LET AE=A+3
9983 PRINT "1ST LINE TO BE RENUMBERE
D=";
9984 GOSUB 9971
9985 PRINT "1ST NEW LINE NUMBER=";
9986 INPUT N
9987 PRINT N,"INCREMENT LINES BY:";
9988 INPUT I
9989 PRINT I
9990 IF A>AE THEN GOTO 9997
9991 IF N>9969 THEN GOTO 9999
9992 POKE A,INT (N/256)
9993 POKE (A+1),N-256*INT (N/256)
9994 LET A=A+4+PEEK (A+2)+256*PEEK (
A+3)
9995 LET N=N+I
9996 GOTO 9990
9997 PRINT ,,"RENUMBER COMPLETE"
9998 STOP
9999 PRINT ,,"CANT COMPLETE. LINE NR
>9969."
```

Sample Run:

```
ENTER NUMBER PREFIXED:
  B IF BINARY
  D IF DECIMAL
  H IF HEX
```

CURVE program:

```

1 REM ? COPY BORDER !? GO 3
UB VAL <>? COPY e!? BORDER GO 3
UB VAL <>X
10 LET a=50: DIM x(20): DIM y(
20): DIM b(20): DIM c(100): DIM
d(100): POKE 23730,30: POKE 2373
1,231: GO TO 40
20 INPUT "1)cls 2)copy 3)conti
nue "/t: IF t=1 THEN CLS
30 IF t=2 THEN COPY
40 INK 0: INPUT "1)begin 2)alt
er 3)store 4)quit":f
50 GO TO (f*100)
100 INPUT "total number of corn
ers: "g
110 IF g>20 THEN INPUT "MUST be
<=20...try again:":g: GO TO 110
120 LET n=g-1: INPUT "first coo
rdinates: x=";x:" y=";y: GO SUB
750
130 FOR i=1 TO n+1
140 LET x(i)=x: LET y(i)=y
150 PLOT x,y: IF i=n+1 THEN GO
TO 180
160 INPUT "next coordinates: x=
";x:" y=";y
170 GO SUB 750
180 NEXT i
190 GO SUB 510: GO TO 20
200 INPUT "1)list 2)fix 3)old 4
)both 5)MM":h
210 IF h=5 THEN GO TO 20
220 GO TO (200+h*30)
230 CLS : PRINT "corner: (x)
(y)"
240 FOR i=1 TO n+1: PRINT "
";i:");TAB 10;x(i);TAB 17;y(i)
250 NEXT i: GO TO 200
260 INPUT "alter corner ___? (0
if done)":i
270 IF i=0 THEN GO SUB 500: GO
TO 200
280 INPUT "new coordinates: x="
;x(i):" y=";y(i): GO TO 260
290 INK 7: PLOT 175,USR 26727:
INK 0: GO TO 200
300 INK 7: PLOT 175,USR 26715:
INK 0: GO TO 200
320 INK 7: PLOT 175,USR 26727:
INK 0: GO SUB 650: GO TO 20
400 STOP

```

```

500 CLS
510 LET c(1)=x(1): LET d(1)=y(1
)
530 FOR e=2 TO a-1
540 LET j=((e-1))/(a-1): LET b(
1)=(1-j)^n
550 FOR i=1 TO n
560 LET b(i+1)=(g-i)/i*j/(1-j)*
b(i)
570 NEXT i
580 LET c(e)=0: LET d(e)=0
590 FOR i=1 TO n+1
600 LET c(e)=c(e)+b(i)*x(i)
610 LET d(e)=d(e)+b(i)*y(i)
620 NEXT i
630 NEXT e
640 LET c(a)=x(g): LET d(a)=y(g
)
650 INPUT "C)curve only F)frame
& curve":z$
660 IF z$="c" THEN GO TO 710
670 FOR i=1 TO n
680 PLOT x(i),y(i)
690 DRAW x(i+1)-x(i),y(i+1)-y(i
)
700 NEXT i
710 FOR e=2 TO a-1
720 PLOT c(e),d(e)
730 NEXT e
740 RETURN
750 IF x<=255 AND x>=0 AND y<=1
75 AND y>=0 THEN RETURN
760 INPUT "HEY!...x<256,y<176!
x=";x:" y=";y: GO TO 750

```

1 REM contents:

1 REM xxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xx

26715	1
26716	255
26717	23
26718	17
26719	31
26720	231
26721	33
26722	0
26723	64
26724	237
26725	176
26726	201
26727	1
26728	255
26729	23
26730	17
26731	0
26732	64
26733	33
26734	31
26735	231
26736	237
26737	176
26738	201

This is a sample
of the Message
Board. It types
fast & is very
legible from far
away!

Just the sort of
thing to use if
you had trouble
speaking.

Sample of Message Board.
Press any key to continue.

HI BABE...WANT
TO HAVE DINNER
OUT TONIGHT?
WILL CALL YOU
LATER!
LOVE...GEORGE

Re-Ink Old Ribbons

All it takes
is a few minutes and a can of WD-40.

Carefully remove the plastic cover of a
spent ribbon cartridge. Keep the car-
tridge flat to prevent the ribbon from
falling out, and be especially careful not
to disturb the assembly that moves the
ribbon. Place the cartridge on top of
several sheets of old newspaper.

With the top of the cartridge removed,
spray the bunched-up ribbon with WD-
48. Try for even coverage, but avoid
soaking the ribbon. Leave the ribbon
open for about a week. The capillary ac-
tion of the nylon fiber will absorb and
distribute the lubricant, while evapora-
tion will help remove any excess fluid.

Carefully put the top of cartridge back
on and snap it in place. You can use the
cartridge immediately, though if you
wait another week, the lubricant will be
even more thoroughly dispersed
throughout the ribbon. Store the sprayed
ribbon in a plastic bag to prevent further
evaporation of the solvent.



```
3 PRINT AT 20,0; INK 2;"Sample  
of Message Board. Press  
any key to continue.": PAUSE 0:  
CLS
```

```
4 PRINT AT 3,0; INK 3;"LARGE  
TYPING @1984 G.Gilder": INK 2;TA  
B 0;"
```

```
"",,,,, INK 1;"Type normal..  
17 letters per lineAll letters &  
symbols are legal.Delete key wo  
rks. The buzz is l  
ike a margin bell and indicates  
the end of line.""press any k  
ey to start.": PAUSE 0: CLS
```

```
5 FOR y=0 TO 165 STEP 15: FOR  
x=0 TO 240 STEP 15
```

```
10 LET xs=2: LET ys=2: LET cs=
```

```
4:
```

```
20 IF INKEY$("<>") THEN GO TO 20
```

```
30 IF INKEY$="" THEN GO TO 30
```

```
40 LET d$=INKEY$: LET q=0
```

```
45 IF CODE d$=12 THEN GO SUB 4
```

```
00
```

```
90 LET a=23305: POKE a,x: POKE
```

```
a+1,y: POKE a+2,xs: POKE a+3,ys
```

```
: POKE a+4,cs: LET a=a+4: FOR i=
```

```
1 TO LEN d$: POKE a+i,CODE d$(i)
```

```
: NEXT i: POKE a+i,255: RANDOMIZ
```

```
E USR 32255:
```

```
95 IF q THEN GO TO 20
```

```
100 NEXT x: BEEP 1,20: NEXT y
```

```
400 IF x=0 THEN LET x=240: LET
```

```
y=y-15
```

```
405 LET x=x-15
```

```
410 LET d$=" ": LET q=1: RETURN
```

```
500 RESTORE 520: FOR a=40000 TO  
40020
```

```
510 READ x: POKE a,x: NEXT a
```

```
520 DATA 17,0,64,33,215,227,6,2
```

```
7,197,6,0,126,18,19,35,16,249,19
```

```
3,16,244,201
```

```
530 RETURN
```

```
9000 STOP
```

```
9900 SAVE "samp.cod"CODE 58327,
```

```
7000: SAVE "large.cod"CODE 3225
```

```
6,277: SAVE "BIGTYPE" LINE 9910
```

```
9910 LOAD "samp.cod"CODE : LOAD
```

```
"large.cod"CODE : GO SUB 500:
```

```
RANDOMIZE USR 40000
```

```
9920 GO TO 1
```

```
9999 REM THE PROGRAM ABOVE WAS
```

```
DEVELOPED WHEN, A FEW YEARS AGO
```

```
I LOST MY VOICE FOR A RATHER
```

```
EXTENDED PERIOD. THIS "BOARD"
```

```
LITERALLY BECAME MY VOICE FOR
```

```
MANY WEEKS. THE "SAMP" COD.CODE
```

```
IN LINE 9900 IS THE SAMPLE
```

```
MESSAGE ABOVE. IT CAN OF COURSE
```

```
BE ANY MESSAGE YOU CHOSE.
```